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NATURAL HISTORY OF SOREX MERRIAM IN WASHINGTON STATE

Murray L. Johnson and C. Wesley Clanton

There is practically no information available regarding the natural history of the shrew *Sorex merriami* Dobson. This is a wide-ranging species, recorded from North Dakota, Montana, Wyoming, Nevada, California, Oregon and Washington. The subspecies *Sorex m. leucogenys* Osgood occurs in Nevada, Arizona and Utah. (Mickey and Steele, Jour. Mamm. Vol. 28 p. 293, 1947.) In most instances only a single specimen, often incomplete, has been obtained. In the state of Washington, C. W. Clanton has trapped a good series from which the following information has been derived.

These specimens are a by-product of Clanton's work on the sage vole, genus *Lagurus*, and plague infestation, therefore the localities are within the range of that genus. Locality records are in Douglas, Lincoln, Grant, Kittitas, and Yakima counties, all bordering on the Columbia River in central Washington. The Washington records before Clanton's field work are few: Starbuck, Columbia County, (Jackson No. Am. Fauna No. 51, p. 81, 1928); Grant County in Upper Grand Coulee, (Johnson, Cheney and Scheffer, Murrelet Vol. 31, p. 39, 1950); James while working with Clanton caught two specimens, one in Lincoln County, another in Kittitas County, (Jour. Mamm. Vol. 34, p. 121, 1953).

HABITAT

All specimens are from the sagebrush-bunchgrass region as that is the territory of *Lagurus* in Washington, with the exception of one from the floor of the Grand Coulee. To date no Merriam shrews have been taken in the areas of extreme aridity that can be successfully colonized by *Lagurus*. They are not more common in areas near permanent water. In these areas *Sorex vagrans monticola* reaches its maximum numbers.

In trapping for plague determinations, traps are placed at intervals through various soil types as all rodents are desired. *Microtus* are usually taken in damp spots; as yet no Merriam shrew has been taken in soil used exclusively by *Microtus*. Habitat preference of *Lagurus* versus *Microtus* appears to be mainly related to moisture. *Microtus* in its dry limits lives in situations where low growing vegetation is rank enough to hold down evaporation and conserve the moisture supply. *Lagurus* avoids these places and lives under drier conditions with little ground cover.

It appears that the habitat requirements of Merriam shrews are similar to *Lagurus* with the rodent able to tolerate more dryness; constantly moist soil is avoided. It may further be suggested that the underground passages of *Lagurus* furnishes protection for the shrews and the insects on which they subsist, in otherwise barren arid territory. No *Sorex merriami* have been taken in moderate amounts of trapping away from *Lagurus* populations.

MAMMAL ASSOCIATIONS

Other small mammals besides *Lagurus* that are found in the same habitat are:

- Peromyscus maniculatus gambeli* — Common
- Reithrodontomys megalotis megalotis* — Fairly common
- Microtus longicaudus* ssp. — Occasional
- Microtus montanus canescens* — Common
- Perognathus parvus* ssp. — Fairly common
- Onychomys leucogaster fuscogriseus* — Occasional, rare after 1949-1950 winter.

Eutamias minimus ssp. — Fairly common

Thomomys talpoides devexus — Fairly common

Sorex vagrans monticola — Occasional

FOOD HABITS

The following determinations of stomach and intestinal contents were done by Mr. Robert T. Mitchell, Staff Entomologist at Patuxent Research Refuge, Laurel, Maryland. (U. S. Fish and Wildlife Service). Concerning these analyses, Mr. Mitchell states:

"All foods were rather finely chewed, as is usual with shrews, so it was not feasible to carry determinations to greater detail. We may add that statements as to quantities of food in stomachs and intestines are based on dried material. If the food had been measured moist, as it came from the organs, its volume would have been considerably greater."

| Date | Report |
|-------------------|---|
| June 1, 1950 | Stomach empty. Intestine, trace amounts. Spider (<i>Araneida</i>) 20%. Caterpillar (<i>Lepidoptera</i> larva) 60%. Beetle (<i>Coleoptera</i>) 20%. |
| June 1, 1950 | Stomach, 0.1cc. Spider (<i>Araneida</i>) 8%. Caterpillar (<i>Lepidoptera</i> larvae) 90%. Undet. insects 2%. Intestine, 0.05cc. Spider (<i>Araneida</i>) 4%. Insect eggs 5%. Caterpillar (<i>Lepidoptera</i> larva) 90%. Undet. insect 1%. |
| June 2, 1951 | Stomach 0.1cc. Spider (<i>Araneida</i>) 10%. Cave cricket (<i>Ceuthophilus</i>) 60%. Beetle (<i>Carabidae</i>) 30%. |
| June 7, 1950 | Stomach, 0.1cc. Spider (<i>Araneida</i>) 40%. Caterpillar (<i>Lepidoptera</i> larva) 60%. Intestine, trace amounts. Spider (<i>Araneida</i>) 30%. Caterpillar (<i>Lepidoptera</i> larva) 70%. |
| Sept. 27-29, 1951 | Stomach (3 specimens) 0.1cc Spider (<i>Araneida</i>) 25%. Cave cricket (<i>Ceuthophilus</i>) 10%. Beetle (<i>Carabidae</i>) 25%. Beetle (<i>Tenebrionidae</i> larva) 40%. |
| Sept. 30, 1950 | Stomach, trace amounts. Spider (<i>Araneida</i>) 35%. Caterpillar (<i>Lepidoptera</i> larva) 60%. Cricket (<i>Gryllidae</i>) 5%. Intestine, 0.05cc. Spider (<i>Araneida</i>) 60%. Caterpillar (<i>Lepidoptera</i> larva) 30%. Beetle (<i>Coleoptera</i>) 10%. |
| Oct. 13, 1951 | Stomach and intestine 0.15cc. Beetle (<i>Coleoptera</i>) 10%. Beetle (<i>Tenebrionidae</i> larva) 90%. |
| Nov. 2, 1951 | Stomach and intestines .05cc Beetle (<i>Carabidae</i>) 70%. Ichneumon fly (<i>Ichneumonidae</i>) 30%. |
| Nov. 7, 1951 | Stomach and intestine 0.1cc Cave cricket (<i>Ceuthophilus</i>) 85%. Beetle (<i>Coleoptera</i> probably <i>Carabidae</i>) 5%. Ichneumon fly (<i>Hymenoptera</i> , probably <i>Ichneumonidae</i>) 10%. |

REPRODUCTION

The following chart shows the records of sizes of testes and relative age, based on the skull in male shrews:

| | | |
|----------------|----------------|----------|
| Mar. 10, 1953 | 5mm by 3.5mm | very old |
| Mar. 11, 1953 | 5.5mm by 3.5mm | old |
| Mar. 12, 1953 | 5mm by 3.5mm | old |
| April 25, 1952 | 5mm by 3.5mm | no skull |

| | | |
|----------------|-----------------|----------|
| April 28, 1951 | 5mm by 4mm | very old |
| June 1, 1950 | 5mm by 3.5mm | old |
| June 1, 1950 | 6mm by 4mm | old |
| June 16, 1949 | 2mm by 1.2mm | young |
| Aug. 6, 1948 | 2.5mm by 1.5mm | |
| Sept. 29, 1951 | 1mm by 1mm | young |
| Sept. 29, 1951 | 1mm by 1mm | young |
| Sept. 30, 1950 | 1.2mm by 0.75mm | young |

The following positive findings were made on 17 females:

Mar. 16, 1950—Uterus large, but no swellings. Mammary glands enlarged.

April 23, 1952—Uterine swellings, 2mm by 3mm, 4 rt., 3 left.

May 1, 1951—Uterine swellings, 2.5mm in diameter, 2 rt., 3 left.

July 7, 1950—11mm embryos, 3 left, 3 rt. Mammary glands enlarged.

July 1, 1953—Nursing.

Oct. 28, 1953—Mammary glands enlarged.

A strong soricine odor has been noted particularly in the fresh shrews during the early breeding season. This may represent one method of attraction when wide dispersal might make mating a difficult biological accomplishment. Thus far no results have been obtained by scenting traps; however, cutaneous flank glands which may be related to this phenomenon are prominent in males in April and June.

MOLTING

There is a clear cut summer and winter pelage. Without going into a more formal description, these may be noted as follows: Summer: pale grizzled brown dorsally, very light ventrally, white washed with buff. Winter: pale brownish gray dorsally, nearly pure white ventrally. The hair is noticeably longer in summer. In both pelages the under fur is darker both dorsally and ventrally. The tail is distinctly bicolor winter and summer, pale brown above and white below. Feet are white winter and summer.

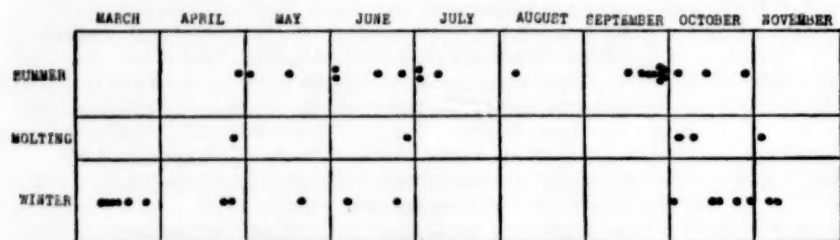


Figure one shows the relative dates of the observed molts in forty-six specimens of *Sorex merriami*

The method of molting shown in five specimens is interesting. In the spring molt of April 25, 1951, there are two more or less symmetrical large patches on either side where the old fur has been shed and the new summer pelage is partially grown in. The remainder of the animal is in winter pelage. The June 28, 1951, specimen shows a small apparently residual patch of long winter fur over the sacrum and some between the shoulders.

The Oct. 2, 1953 specimen shows new winter fur over the posterior half of the dorsum. On the anterior half of the dorsum and laterally on the posterior half the new fur can be found coming in densely under the old summer pelage. Another shrew caught on the same day shows no molt and is in summer pelage.

The Oct. 8, 1953 specimen shows a diffuse new growth of hair beneath, grayer than usual worn summer pelage. This is over the dorsum beginning behind the shoulders, most marked over the rump.

The Nov. 2, 1951 shrew shows a diffuse new growth of winter fur over the entire dorsal area. There is a small area on each flank where the old fur has been shed and only the new fur is visible.

PARASITES

The only ectoparasites found have been several fleas, identified as common rodent fleas, specific to mice and therefore considered as accidental.

Several intestinal parasites have been identified by Dr. Robert Rausch, Arctic Health Research Center, Anchorage, Alaska. One specimen contained a larval nematode of the genus *Porrocaecum*. Six specimens were found to contain the cestode, *Hymenolepis macyi* Locker and Rausch, 1952. Three instances of infestation by the large round worm, *Pseudophysaloptera soricina* Baylis, 1934, were encountered. A relatively small per cent of the specimens were examined for internal parasites.

TRAPPING

Inasmuch as Merriam shrews were trapped in sets made for rodents primarily, certain factors have become evident. In the first place almost without exception, this species of shrew has been caught in *Lagurus* runways, in unbaited traps. Two hundred traps are placed per night and in most instances only one shrew (usually none) was caught. Rarely two were caught in a single trap line. The occurrence is sporadic though we found instances where several shrews were taken in the same general area. Baited traps set for seed eating rodents besides *Lagurus* did not produce Merriam shrews. Many *Lagurus* traps were set in such natural runways as against sagebrush, grass clumps, rocks on dirt banks and in some cases in unconfined area between sage clumps. On all of these localities shrews have been caught.

The year 1953 was apparently best for shrews, 14 being taken. In one area in Douglas county where several thousand trap nights had in previous years caught no *Sorex merriami*, one was finally caught this year. They may be caught on the second night though most trapping is for one night only.

One shrew was found in a trap about 9:00 a. m. It was warm and relaxed and had apparently just been caught. The night preceding had been one of continuous rain until about 8:00 a. m. and all rodents taken were wet. This is the only specimen taken in the day time and indicates that possibly the shrews do not move about in the rain.

SUMMARY

Data relating to the natural history of *Sorex merriami* have been secured from 46 specimens since 1948.

1—The principal food of *Sorex merriami* is indicated to be caterpillars, beetles, spiders and cave crickets.

2—Mating probably takes place between March and June. This may vary with lateness of the season. Three pregnancy records indicate five to seven young are born from May to July.

3—There is a spring molt in April and a fall molt as early as Oct. 1, and as late as Nov. 2, with a definite winter and summer pelage.

4—Trapping specimens is best done by unbaited runway sets in *Lagurus* territory.

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2,4-D AND ITS RELATIONSHIP TO WILDLIFE

By Charles F. Yocom

With the recent accelerated development of herbicides there has been a widespread use of this material to control weeds on agricultural land with little thought to its ultimate relationship to agriculture and related fields. We must admit that 2,4-D is a valuable tool, but it should be used with discretion. Long range studies should be continued or extended to evaluate physiological and ecological effects of 2,4-D on plants and animals.

According to reports, box elder, black locust, black walnut, shrubs, and many other plants show ill effects from 2,4-D that is scattered by air currents. The ultimate effect on our native shrubs, herbs, and grasses is not understood and there is no way of predetermining at this time what the final outcome will be if 2,4-D is used indiscriminately. Obviously, many plants would be eliminated in many areas.

The State of Washington Department of Game has initiated an extensive cooperative program with farmers to establish game areas throughout the agricultural regions of Washington. There is a large staff of trained men working under the Acquisition and Development of Lands Division of this department. Thousands of plants, including black locust, caragana, multiflora rose, several other shrubs, grasses, and legumes (Miller, Ball, and Knott, 1948) are being planted on these areas for upland game birds on private land throughout Spokane, Lincoln, Grant, Douglas, Franklin, Walla Walla, and Whitman counties. It is apparent the uncontrolled use of 2,4-D could nullify in part the agency's efforts to increase farm game birds and mammals. Some of these areas have already been damaged severely and more of these areas may be destroyed unless there is better control in the application of 2,4-D.

Indiscriminate spraying of roadsides, creek banks, fence rows, unused gullies, and field corners will eliminate much of the native food and cover so essential to ring-necked pheasant, Hungarian partridge, valley quail, and rabbits (Yocom, 1942; Ball, Knott, and Lauckhart, 1941; Knott, Ball and Yocom, 1943). It seems ecologically unsound to destroy natural cover that will be replaced by weeds and other less desirable plants after spraying. All wild species are like domestic stock or poultry — they must have suitable areas in which to carry on their life cycle, for without these basic requirements the wildlife cannot survive. This has happened in the case of the sharp-tailed grouse in the Palouse country and adjacent areas where all available native cover has been eliminated, by other means than 2,4-D — such as bulldozing, burning, and plowing (Yocom, 1952). The elimination of the sharp-tail from most of its range was, of course, inevitable since it required large areas of native plants to exist. In the case of pheasants, quail, rabbits, and huns a reduction of population need not occur if there is wise land-management.

Value of Game Farm Species — Wallace (1952), in making an economic study of wildlife in the State of Washington, found that in 1950 hunters spent \$19,176,000 on upland game birds, which would include ring-necked pheasants, Hungarian partridge, and quail. An additional expenditure of over \$6,000,000 was made by waterfowl hunters and \$36,668,000 by fishermen. Over \$19,000,000 was expended in the pursuit of big game animals. Naturally much of the fishing and the hunting for big game was not done on agricultural land and thus cannot be considered too important in this discussion. However, the upland game bird species and much of the waterfowl were hunted on agricultural areas and are a part of the total production on this type of land, so we can say that these species are worth nearly \$25,000,000 annually. Approximately one-half

million waterfowl are produced in Eastern Washington yearly and many of them are produced along streams in the wheat belt and in stock ponds (Yocom, 1951).

To assure a continuous crop of these valuable species the State Game Department, from April, 1949, to March, 1951, spent over \$1,376,000 in operations and salaries in the Acquisition and Development of Lands Division. The breakdown of the figures for this division are: 7% for big game, 4% for upland game, 6% for waterfowl, and 3% for public fishing areas (Washington State Game Commission's 10th Biennial Report, 1951).

Habitat Development — In order for me to illustrate better the program initiated by the State Game Department I shall quote from the Game Commission report for 1951:

"The great percentage of the take of upland birds in this state is made up of wild produced birds. The capacity of the state for producing birds in the wild is entirely dependent upon the amount of usable habitat available. It has further been demonstrated that the success of survival of game farm liberated birds is greatly dependent upon their being released into good habitat. In view of this, it is obvious that one of the most sound and lasting methods of maintaining or increasing the production of upland birds in the state is by retaining existent habitat and developing more. The Game Department's pheasant habitat development program is aimed to accomplish both of these. By working with other conservation agencies and with farm groups to educate them as to the value of cover to game and its related values — conservation of soil and moisture, much can be gained toward the retention of existent upland bird habitat. To start out with bare ground and make all the necessary plantings of grass and shrubs and develop a source of year-round water would be a very costly procedure, for the money invested would actually create a small amount of additional upland bird habitat. However, throughout many of the pheasant ranges of the state there are potentially excellent patches of pheasant cover in good relation to year-round food supply that are not producing birds either because of lack of nesting cover, water, or brush type cover. By furnishing the missing factor these areas become productive. This development work is being carried on primarily in the wheat growing regions of eastern Washington under cooperative agreement with private land owners. Trained game technicians make a detailed survey of the farm ownership and determine what areas could be developed to benefit game. Wherever possible dual benefit of game and soil conservation is sought. Following this detailed survey, the proposals are discussed with the landowner and an agreement as to specific areas and their use is reached. The landowner consents to set aside portions of his farm for Game Department use for a period of ten years at no cost. The Department then makes the necessary plantings and other development. Water is furnished in dry areas by the installation of cisterns which collect rain and snow water and store it for use of birds during the summer period. Where brush type cover is the limiting factor, ground is plowed and prepared and shrubs are transplanted.

In other areas, grass may be seeded into the prepared soil to furnish nesting and roosting areas. In nearly all cases a food hopper is placed on the tract for use during extremely severe winter conditions when other food supplies are covered by deep snow."

Summary of Pheasant Habitat Development Program in the State of Washington — Up to April 1, 1951, the State of Washington Department of Game had 255 farms under agreement and had established 612 habitat areas involving 2,199 acres that had been included on these respective farms. The following number of habitat areas have been established: Adams county 65, Spokane county 124, Douglas county 21, Lincoln county 7, Walla Walla county 2, and other counties 36.

In addition to this program the Game Department is working closely with farmers and sportsmen on a project which they call the Farm-Sportsman Program. The two plans combined provided 716,040 acres of hunting land for sportsmen in 1950 (491,040 under Farm-Sportsman and 225,000 under pheasant cooperative).

Summary — It is obvious that indiscriminate spraying with 2,4-D could

harm any of the areas established by the State Game Department. In view of the fact that farm game species are worth nearly \$25,000,000 annually and that the State Game Department is spending over \$1,300,000 in operation and salaries in the Acquisition and Development of Lands Division it seems imperative that use of 2,4-D should be regulated to avoid unnecessary damage to public and private properties for the welfare of the people in the State of Washington.

In most cases game farm species adjust and thrive under good agricultural practices, but it is evident that indiscriminate spraying with 2,4-D is not a wise agricultural procedure.

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SIGHT RECORD OF TREE SPARROWS IN SKAGIT COUNTY, WASHINGTON By Charles F. Yocom

Apparently tree sparrows are extremely rare in the State of Washington west of the Cascades for no records are mentioned by Jewett, et al, (1953). On December 24, 1950, I was hunting waterfowl with T. R. Yocom on the flats northwest of the city of Mt. Vernon, Skagit county. In the afternoon waterfowl shooting was poor so I spent considerable time observing sparrows along the thickets in fence rows and along dikes. Five tree sparrows were seen in small trees and bushes along one dike bordered by crop land. I was able to approach near the birds on several occasions for a period of several minutes.

We have many records of this species east of the Cascades in Washington including the Potholes area, Grant county (Harris & Yocom, 1952) and the Palouse country (Hudson & Yocom, 1954), so I was not surprised at the time to see tree sparrows in western Washington.

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SIGHT RECORDS OF THE OCCURENCE OF CALLIOPE HUMMINGBIRDS IN OKANOGAN COUNTY, WASHINGTON

By Charles F. Yocom, Humboldt State College, Arcata, California and
Henry A. Hansen, Game Biologist, Spokane, Washington

Although there are several records of Calliope Hummingbirds in Eastern Washington (Hudson and Yocom, 1954) there are few recent published summer records.

Throughout the summers of 1947, '48, '49 and '50 field studies took us over much of Washington east of the Cascades although more time was devoted to the channeled scablands than to lakes in the mountainous country of Okanogan, Ferry, Stevens and Pend Oreille counties. Observations made in the latter areas were restricted for the most part to the months of July, August and September. In 1950 a three-day trip (June 14, 15 and 16) took us through northern Douglas County; the high potholes area located on the Indian Reservation of Goose and Omak Lakes; Okanogan River Valley; the high country southwest of Oroville, northeast of Loomis, and east of Palmer Lake, Okanogan County; Bonaparte Lake; and to the San Poil River Valley, Ferry County.

On June 16 Steve Krusoff of Oroville took us by car over mountain roads southwest of Oroville in the granitic formations on the high ridges between the Okanogan River, Palmer Lake, and the Sinlahekin River north of the Tonasket-Loomis highway. Oroville is 980 feet above sea level and the highest peak in this area is 5500 feet. The area that we traveled through was from 3000 to 4000 feet elevation.

This area was homesteaded at one time and small holdings dotted the mountain sides. Now the economy is that of grazing and all that remains of the former era are deserted shacks, decaying grain field fences, and remnants of orchards.

Along these narrow mountain roads often bordered by clumps of shrubs including chokeberry we noticed hummingbirds dart across the road or saw them perched on dead branches extending above the green thickets. Close observation with binoculars proved these birds to be Calliope males. Often they would allow one to approach very close so that detailed observation could be made.

At the southwest end of Wanacut Lake we drove up a steep road along a small stream bordered by alders and shrub thickets. Calliope males were seen here. A walk took us from the end of the passable road on up to the mountain side to two unnamed ponds. In this area thickets of *Prunus emarginata*, *Rosa sp.*, *Amelanchier florida*, et. al., were scattered over the grassy hillsides and it was here that we saw six Calliope males. No females were identified.

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AMERICAN PINTAIL (*Anas acuta tzitzihoa*) ON CRATER LAKE

By Charles F. Yocom

Although many ornithologists have investigated the bird life of Crater Lake National Park over a period of years, only one sight record of pintails had been recorded until the summer of 1952. Farner (1952) states that J. C. Wright, fire guard on Mount Scott, on August 22, 1949, observed a flock of 20 to 30 Pintails flying southward toward Upper Klamath Lake.

From July 28 to August 3, 1952, several hundred waterfowl were seen on Crater Lake or flying out over the rim of this lake by ranger naturalists. Apparently most of these ducks were pintails, for all flocks seen by the writer at close range were this species. The following records indicate the large number of waterfowl that were seen:

| Date | Number | Location | Authority |
|----------------|-------------|---------------------------------------|------------------|
| A.M. 28 July | 100 | On surface near Phantom Ship | D. S. Farner |
| A.M. 30 July | 1 flock | On surface out from Sinnott Memorial | Robert Wood |
| A.M. 31 July | 2 flocks | Near Rim Village flying south | Warren Fairbanks |
| *A.M. 1 August | 150 | Near Wizzard Island | C. F. Yocom |
| A.M. 1 August | large flock | East of Wizzard Island | C. F. Yocom |
| A.M. 2 August | 60 | Near Wizzard Island | C. F. Yocom |
| *P.M. 2 August | 200-500 | Feeding and flying near Garfield Peak | Yocom & Farner |
| P.M. 2 August | 300 | Feeding west of Phantom Ship | Yocom & Farner |
| *A.M. 3 August | 200 | Flying near Sinnott Memorial | Robert Wood |
| A.M. 3 August | 200 | On surface out from Sinnott Memorial | Robert Wood |
| P.M. 3 August | 3 flocks | Far out in lake | C. F. Yocom |
| *P.M. 3 August | 800 | Beyond Wizzard Island | D. S. Farner |
| P.M. 17 August | 100 | East of Wizzard Island | D. S. Farner |

*These flocks were identified as pintails. The large flock seen by Farner and the writer on August 2 flew very close and were seen under favorable light so that unmistakable markings were seen.

These flocks of pintails were undoubtedly migrants that are known to pass through Washington and Oregon and arrive in California during the last of July and the first part of August. This early flight of pintails is not understood by waterfowl biologists in the Pacific flyway, but banding will assist in unraveling this problem. There are many later flights of pintails as indicated by Yocom (1951). As a matter of fact, the writer saw migrating pintails 465 nautical miles west of Cape Blanco, Oregon, on August 30, 1945.

It is not unusual that pintails should pass over Crater Lake National Park in migrating, but it is unusual that large flocks alighted on the lake and remained for some time, as pintails are classified as pond ducks which normally feed by means of tipping in shallow marshes and lakes. Flocks observed on Crater Lake appeared to be feeding. They remained in close-knit bunches and swam over the surface quite rapidly, often times flying a short distance, then milling about in compact groups. Evidently these birds were securing some desirable food items on the surface of the lake.

No pintails were seen after August 17 and it is believed that all of the flocks passed on south. The birds observed leaving the lake flew out over the rim between Sun Notch and The Watchman, going toward Klamath Lake.

REFERENCES

- Farner, Donald S. 1952. *The Birds of Crater-Lake National Park*. University of Kansas Press. IX, 200 pp.
- Yocom, Charles F. 1951. *Waterfowl and Their Food Plants in Washington*. University of Washington Press, Seattle, Washington. XVI, 272 pp.

GENERAL NOTES

Close Nesting of Mallard and Marsh Hawk

The Palouse hills of Whitman County in Southeastern Washington are utilized primarily in the production of wheat. This economy places practically all acreage at a premium. Draws, pockets, and stream bottoms with standing cover, which are of such importance to the wildlife of the area, are too scarce and are continually being encroached upon.

It was in one of these more mesic waste areas that, on May 3, 1953, the two authors, while hunting Hungarian partridge nests, flushed a female mallard (*Anas platyrhynchos platyrhynchos*) and a female marsh hawk (*Circus hudsonius*) from their nests.

The mallard nest, containing nine eggs, was situated in a clump of cattail (*Typha latifolia*) while the marsh hawk nest, containing four eggs, was located in a small open swale. The distance from egg to egg between the two nests was exactly 39 inches. Other dominants of the vegetation of the area were willow (*Salix* spp.), rush (*Juncus balticus*), sedge (*Carex* spp.), and blue grass (*Poa pratensis*). An ecotone of native species and wheatland flora surrounded this vegetation.

During repeated visits to the nests, both females flushed almost simultaneously and hung close by in the air. Under such circumstances, knowledge of the respective nests must have been known by both species.

On May 27, eight mallard eggs and one marsh hawk egg hatched. The following day the ducklings were discovered roaming throughout the immediate area of both nests. On May 30, the ducks had departed, probably toward a creek bottom approximately one-half mile away, and a second marsh hawk had hatched. This was the last visit to the area.

The nesting of various species of birds in close proximity to one another is not uncommon. Many examples of this have been noted before. However, the distance between the two nests and the combination of species involved has led us to present this interesting case.—CHARLES L. BUECHELE and DOUGLAS NOSLER.

*Note on Swainson Hawk (Buteo swainsoni Bonaparte) for the
Cariboo District of British Columbia*

On July 9th, 1953, I found an adult male Swainson hawk shot by an unknown person near the road at Dog Creek, British Columbia. The bird being still warm, I skinned it on the spot and on examination found the stomach and crop to be full of large grasshoppers.

This is the first record of Swainson hawk I have seen for twenty years in this part of British Columbia, although Munro (Canadian Journal of Research, Vol. 23, p. 54, 1945) records several from the District, notably Lake LaHache, Buffalo Lake, and Horse Lake.

On September 4, 1953, I received a telephone call from this same place near Dog Creek, and was advised that a young live hawk had been captured. I went to the place and found the bird to be an immature Swainson hawk (female), very thin and with its entire body covered with small lice. It died within a few days and an examination of its stomach revealed the presence of a few transparent worms approximately three inches in length and resembling *Syngamus trachealis*. The stomach wall had been perforated by the worms and I presume this was the cause of death.—LEO JOBIN, Williams Lake, British Columbia, October 27, 1953

*Notes on the Prairie Falcon and the Peregrine Falcon in the
Cariboo District of British Columbia*

One eyrie of the prairie falcon (*Falco mexicanus* Schiegal) was occupied for several years at English Gulch located twenty-five miles west of Williams Lake, B.C. During the summer of 1950 the female disappeared, and since that time the male has occupied the eyrie alone.

The second eyrie of the prairie falcon known to be in the Cariboo District is located near Dog Creek, B.C. and is occupied by a pair each season from the end of March to the end of July.

I have watched these birds three times in each month during the breeding season and have observed that while one bird hunts the other remains to guard the nest. The life and habits of the prairie falcon differ in many respects from that of the peregrine falcon (*Falco peregrinus anatum* Bonaparte).

Generally, small mammals, such as chipmunk, squirrel, the odd mouse or gopher are brought to the eyrie rather than birds. When the young are nearly full grown they have large appetites and as soon as the approaching parents are sighted they flap their wings vigorously. If the booty is a chipmunk, one of the young birds grabs it by the head, another by the hind part, and they pull in opposite directions until the animal is torn in two, when it is immediately swallowed. An adult seldom remains out hunting for more than half an hour at a time, and I would estimate that 90% of the prey brought to the eyrie during my visits there were chipmunks.

On July 15th, 1953, I collected one young male near the eyrie whose plumage was in perfect condition. In the stomach I found the hind part of two chipmunks including the whole tail, and in the crop the head and front legs of another chipmunk.

The other two young returned to roost on a dead tree just above the eyrie until about July 30th and this was the last time I saw them.

About three-quarters of a mile from the prairie falcon nesting site, a pair of *anatum* has raised a family on the same cliff.

The location of these two eyries is in a very dry and rough area. North of this cliff the terrain is flat and many small lakes are scattered throughout, thus providing a good hunting ground for the duck hawks which live almost entirely on waterfowl. South of the cliff only a few shrubs and small trees are growing in scattered small canyons.

Three young birds were being raised, and the food of these falcons consisted mainly of small water fowl, occasionally some other small birds but seldom animals.

I observed that if any intruder such as a large hawk or crow ventures in the vicinity of the eyrie, the falcon on duty gives chase and it takes only a few seconds for the victim to be caught by the falcon's long claws.

About July 30th the falcons disappeared. It is my first experience in seeing both species of these falcons nesting so close together.—LEO JOBIN, Williams Lake, British Columbia, October 27, 1953.

Flammulated Scops Owl Collected at Sprague Lake

On November 20, 1953, a friend brought me a specimen of an adult male Flammulated Scops Owl (*Otus scops flammulous*) which he secured while duck hunting at Sprague Lake (Colville Lake) in Lincoln county, Washington. The skin is now in my private collection.

I believe this to be the sixth record for this bird in the state.—L. D. LAFAVE, Spokane, Washington, January 23, 1954

Clarkes Nutcracker Nesting Near Spokane

On February 19, 1953, along the little Spokane River, nine miles northwest of Spokane, I observed a pair of Clarkes Nutcrackers (*Nucifraga columbiana*) performing curiously. Knowing that this bird is supposed to be a winter visitor only, I investigated.

They were perched in a fir tree which was situated on the side of a hill. The tree was among some large rocks, a few pine trees, and some alder bushes. The nutcrackers would fly away together for about 50 yards, then separate. Soon one or the other would appear with twigs, bark, pine needles, moss, etc., in its beak. The tree has been identified as *Abies grandis*.

I had understood that the Clarkes Nutcracker was strictly a timberline nester. But needless to say, I investigated and found what I had suspected. A nest was being built. It was 18 feet above ground in a Grand Fir (*Abies grandis*), 10 feet out on a limb in a clump of fir needles. The nest was not yet complete.

Seven days later, February 28, I returned. The Nutcrackers would fly quite close by and make a "croaking" sound. The female then flew to her nest.

I climbed the tree and tried to peer inside the nest, but it was out of reach. The female was sitting on her eggs and didn't move. I then proceeded to cut the limb off and the female still didn't leave the nest. Finally after the limb was nearly removed, she left and didn't return. The male was nowhere in sight. I finally secured the nest and in it were three eggs. They were green spotted with brown and gray. The nest and three eggs are now in my collection.

I believe this to be the third nesting record of the Clarkes Nutcracker in the state.—L. D. LAFAYE, Spokane, Washington, January 23, 1954

Nesting Record of Clark Nutcracker in Washington

Jewett et al. (1953. Birds of Washington State.) list only two nesting records of the Clark Nutcracker (*Nucifraga columbiana*) for the state of Washington. In October and November of 1951, I observed numerous flocks of 25 to 50 and more Clark Nutcrackers in the Ponderosa Pine (*Pinus ponderosa*) forests on the slopes of the low mountains just north of the Spokane River in the vicinity of Tumtum in southeastern Stevens County, Washington. A particularly heavy crop of Ponderosa Pine nuts was apparently an important factor in their presence here where they are usually seen in only small numbers. Anticipating some nesting in early 1952, I spent a half-day in this readily accessible area on April 6, 1952.

A nest containing three young about 14 days of age was found at about 3200 feet on the south facing slope of a ridge near Scoop Mountain about four miles north of Tumtum. The nest was situated next to the trunk, 14 feet up in a slender 30-foot Ponderosa Pine. Superficial examination showed Douglas Fir (*Pseudotsuga taxifolia*) twigs made up the base and walls, while the lining consisted chiefly of strands of bark fiber and grass. A mildly protesting adult approached within ten feet while I photographed the nest and young birds from a position about three feet immediately above the nest. Allowing for a 19-day incubation period (unpublished records) it is evident that the eggs were deposited early in the first week of March. On April 6 nearby slopes, protected from maximum insolation, were still covered with snow.—L. RICHARD MEWALDT, Department of Natural Sciences, San Jose State College, San Jose, California

Nesting of the Mourning Dove on Vancouver Island

As I have been unable to find any record of the Mourning Dove nesting on Vancouver Island, these notes may be of interest.

On July 16, 1953 I found the nest and eggs of a Mourning Dove near Mount Douglas, a few miles north of Victoria. The nest was built in the crotch of a small Garry oak about ten feet above the ground where the main branches diverge from the trunk. It was made of thin dead twigs of Douglas fir and lightly lined with dry grass. The nest was of very flimsy construction with a slight dish or hollow, barely enough to prevent the two eggs from rolling off.

The bird was sitting closely, flying away only upon my near approach and then not going far off; the conspicuous white outer tail feathers made identity certain.

The nest was visited again on July 18, when I took a series of photographs.

I made yet another visit on July 25 and found everything in good order with the bird sitting closely as before.

On August 9 I again visited the site but found only the empty nest without a sign of eggs or birds. I can only presume that the eggs met with an untimely end, either from a crow, raven, squirrel or *Homo sapiens*, as there was hardly time for the eggs to have hatched and for the young to be reared between my visits.—GEORGE A. HARDY, *Provincial Museum, B. C.*

A Specimen of the Lesser Sandhill Crane Taken Near Portland, Oregon

On October 29, 1953 a badly crippled "sandhill crane" was found on the Reeder Ranch on Sauvie Island in the Columbia River near Portland, Oregon. The bird soon died and was brought to the Game Commission freezing room in Portland where it was given to me by Chester Kebbe of the Commission, to prepare as a study skin. It proved to be a fine plumaged adult male, Lesser Sandhill Crane (*Grus c. canadensis*).

In a study of the cranes in the larger collections of birds in Washington and Oregon I can locate only one study skin of this bird, with full data, taken west of the Cascade Mountains in Washington and none taken in Western Oregon.

Cranes are frequently reported during the fall and spring migrations along the lower Columbia River; the lack of specimens with full data has prevented their certain identity in the past. It is quite possible that both the Greater and Lesser Sandhill Cranes occur during migration west of the Cascades but without more specimen evidence the proportion of the two races occurring will remain unknown.

Many years ago a mounted Lesser Sandhill Crane, without data, was seen by Leo F. Simon of Portland, Oregon, in a local collection of birds said to have been killed and mounted on the Reeder Ranch by the former owner of the property.—STANLEY G. JEWETT, *Portland, Oregon, December 20, 1953*

Sight Record of the Redstart in Eastern Washington

My first record of the American Redstart (*Setophaga ruticilla*) occurred near the town of Withrow, Washington, in the Methow Valley on July 4, 1953. My attention was attracted by a bird in a lodgepole pine and upon further investigation, a female Redstart and nest were found in an adjacent cottonwood tree about 20 feet from the ground.—WALTER M. HAGENSTEIN, *Medina, Washington*

English Sparrows and Other Birds Eating Tent Caterpillars

On several successive warm blue-sky days, during late July and early August, 1953, it was the good fortune of Walter Hagenstein of Medina, Washington, and the writer, to observe the emergence from their cocoons of great numbers of the adult moths (*Malacosoma* sp.) that are responsible for producing the succeeding year's crop of the tent or web caterpillars. These are the caterpillars which, if left unregulated, defoliate many species of deciduous trees in the Pacific Northwest. In the 1953 season these caterpillars were unusually numerous and destructive in the Medina and Bellevue areas. A few apple and alder trees were entirely defoliated and attacks were made on several other species of trees.

The moths upon leaving the cocoons were not very proficient with their new wings and the early flight efforts included considerable fluttering. About every protein-loving bird in the neighborhood seemed to be immediately attracted to the more or less helpless moths. We observed robins, rusty song sparrows, Oregon towhees, Oregon black-capped chickadees, Audubon's Myrtle warblers, chipping sparrows, and English sparrows busily engaged in eating the moths. I noted one adult robin catch and crowd fourteen moths into its bill before flying off to feed its nestlings. The English sparrows were numerically in the majority and more than willing to set some sort of moth extermination record, if their appetites were any criterion.

I have never seen any of these birds eat the caterpillars. I gathered and opened many of the cocoons and exposed the live pupae, but failed to note any of them accepted as food by any bird frequenting my feeding platforms. One lone English sparrow did peck at one pupa when it wriggled. The adult moths must be a much more tasty morsel than their preceding life forms.—WEBSTER H. RANSOM, *Bellevue, Washington*, November 21, 1953

Canada Geese Nesting in Western Oregon

Prior to 1952 there were no records of any species of geese nesting in the wild in that portion of Oregon lying west of the Cascade Range. With the development of Sauvie Island, in the Columbia River near the mouth of the Willamette River, as a game management area, the Oregon State Game Commission captured 32 Canada Geese (*Branta canadensis moffitti*) in Warner Valley, Oregon, in June, 1950 for subsequent release on the island on January 24, 1951.

No broods were observed that spring but in May, 1952 three broods with a total of 12 downy young were reported by the Game Commission resident biologist, Mr. A. H. Hoffmeister.

On June 14, 1953, the writer observed a pair of Canada Geese on Sauvie Island with a brood of three young which were approximately three weeks old.—CHESTER E. KEBBE, *Portland, Oregon*, November 17, 1953

Northward Extension of the Range of the California Woodpecker

On September 27, 1952, Ed Butcher found a dead California Woodpecker (*Balanosphyra f. bairdi*) on the main highway about one mile east of Salem, Marion County, Oregon. Although the specimen was badly mangled by passing automobiles Mr. Butcher took it home and placed it in his deep freezer where it remained until I visited his home on June 8, 1953, on which date he gave it to me. The bird was in the fresh fall plumage of an adult, but so badly mashed the sex could not be determined. Kenneth Walker gave a good resume of the range of this woodpecker in Oregon (Condor, 1952, p. 315) up to and including June 1951, when he observed a pair several times in an oak grove at Corvallis, Benton County, Oregon.—STANLEY G. JEWETT, *Portland, Oregon*, December 18, 1953

White Tailed Jack Rabbit in Washington

During the high population of the black-tailed jack rabbit (*Lepus californicus*) in eastern Washington before the 1941 die-off, the white tailed jack rabbit (*Lepus townsendi*) was thought to be close to extermination.

It is therefore a pleasure to place on record the good population that has been observed over the past five years. Localities are scattered over most of eastern Washington, including the following counties: Klickitat, Franklin, Lincoln, Adams, Douglas, Grant and Kittitas, with reports from Yakima county (L. A. Kramer) and Whitman county (Geo. Hudson). Most of these are sight records and a few specimens have been obtained.

The observation is made that although the ranges of the two species overlap, there is a definite preference of the black-tailed jack rabbits for heavy sage brush areas, the white-tailed jack rabbits for the open country, particularly at higher elevations. In winter the white-tailed jack rabbit descends to the sage brush bottoms.

One other factor involved in field observations is that during the very high black-tailed jack rabbit population, this species occupied any and all habitats and is a more noticeable animal in the field. The white-tailed jack rabbit tends to get up and go much more promptly and keeps at a greater distance from the human invader in his home range.

C. Wesley Clanton
Murray L. Johnson
Puget Sound Museum of Natural History
College of Puget Sound, Tacoma, Wash.

Beechey's Ground Squirrel in Washington State

There is considerable interest and practical importance regarding the spread of *Citellus b. douglasi* in the state. It was first known to enter the state in Klickitat County in 1912. Dalquest in his work up to 1942 reports these along the Columbia River between White Salmon River and Goldendale and north to Guler near Mt. Adams.

The population appears to have gradually and strongly progressed until 1950. At this time there was a serious die-off in the heavy population along the Klickitat River. The sick squirrels were badly scabbed as adults. Young were observed which were practically devoid of hair. Some examinations were made but as far as we know the etiological agent of this disease was not proven. This die-off progressed through the areas we have observed, mainly east beyond Goldendale, but there was some come-back noted in 1952 and 1953.

Since 1951 there have been ground squirrels of this species definitely across the Yakima County border as far as six miles along Satus Creek (sight observations and road kills). They are east from Goldendale 21 miles on the Bickleton road.

Further progress into Yakima County may be limited to some degree by the sagebrush terrain: future advance may be along the higher levels in the timber, particularly in oak areas.—C. WESLEY CLANTON, MURRAY L. JOHNSON, Puget Sound Museum of Natural History, College of Puget Sound, Tacoma, Washington.

Oregon Leach Petrel Taken at Tacoma

On November 8, 1953 a longshoreman working the W. R. Grace ship, Santa Flavia, called my attention to a "peculiar" bird that he had picked up on the Schaeffer Dock. The Santa Flavia was just in from South America. The bird on examination proved to be a male Oregon Leach Petrel (*Oceanodroma leucorhoa beali*). We kept the specimen for five days before it died of starvation. It drank water, but refused food. The skinned bird showed no injury except a small hematoma at the base of the neck. Since this race is not normally represented in Puget Sound, and because of its discovery near a recently-arrived ship, speculation immediately arose concerning the possibility that it may have come in on the vessel. I could find no one among the officers or deck crew who had noticed the bird, although two members of the crew claimed to be familiar with the bird in the Pacific Ocean. I believe this constitutes the first recorded specimen from Puget Sound. There are a few sight records for this region.—GORDON D. ALCORN, *College of Puget Sound, February 9, 1954.*

BOOK REVIEWS

"A Guide to Bird Finding West of the Mississippi." PETTINGILL, OLIVER SEWELL. Oxford University Press, 1953. New York, xxiv, 709 pp. Many fine line drawings by George Miksch Sutton. \$6.00.

Dr. Pettingill has brought out a new book, identical in organization, style and treatment as his "A Guide to Bird Finding East of the Mississippi." Such a "guide" book will be of great assistance to anyone going on a "birding" trip into a territory new to him. The mass of data assembled from the 22 states west of the Mississippi has been brought together by leading bird students in each state. The contributors listed at the end of the accounts for each state is authority for most of us. This reviewer has studied the birds of 11 of these states quite thoroughly during the past forty years, and cannot find any reasonable reason for criticism in the text.

The suggested reference material listed on pages 644 to 651 is excellent, and should be read by all bird travelers.

In any work of this kind minor errors will creep in — on page 465, in describing life zones, the author has placed the Canada Jay with sage thrashers and sage hens; an obvious error. While birding at Portland (Oregon) contact the Oregon Audubon Society by phone (Broadway 1023) at the Bird Sanctuary on Cornell Road, N.W. Portland.

Pettingill's "Guide" can be used to advantage by professional as well as amateur bird students.—Stanley G. Jewett, *Portland, Oregon, November 1, 1953.*

"Coyote Control with Compound 1080 — Stations in National Forests." ROBINSON, WELDON B. *Journal of Forestry*, Dec. 1953. Vol. 51, No. 12, pp. 880-885).

This article from the Wildlife Research Laboratory, U. S. Fish and Wildlife Service, Denver, Colo., reviews briefly the effect of poison bait stations on other wildlife besides coyotes. It should be of interest to mammalogists, but of limited interest to ornithologists.

Poison stations using compound 1080 in frozen horse meat are located about one per township, or every 36 square miles for coyote control. Animals that are or might be attracted to such stations are listed. Martens, weasels, minks, red foxes and bears are discussed, and the relative danger to each is indicated. Protection for each of these is recommended on the basis of their habits.

The danger to birds is only briefly mentioned. Golden eagles have been known to feed on such station meats, along with several other species. The author seems to pass off this danger, as he does several others, by analogy, in this case with the effect on magpies. Magpie population is not seriously affected in the vicinity of poison stations. When this observation is extended to golden eagles, a grave error may be introduced. The normal range of a magpie might be only a few hundred acres, but that of the eagle several townships. Thus a poison station in each township could possibly result in complete destruction of the eagles in great areas. This is not even considered by the author.

The article is a competent summary of the problems and possible compromise solutions to this coyote control program. —Garrett Eddy, *Seattle, Wash., Jan. 15, 1954.*

"Birds of Washington State." JEWETT, STANLEY G., WALTER P. TAYLOR, WILLIAM T. SHAW, JOHN W. ALDRICH. University of Washington Press, Seattle, Washington. XXXII, 767 pages. Illustrated with 11 color plates by Roger Tory Peterson, one by E. R. Kalmbach, 99 half-tones, 51 distribution maps, colored life zone map (end paper). \$8.00.

Students of ornithology both amateur and professional will welcome this long-overdue volume which is the first of its kind to appear for the area since 1909. Artistic and technical competence and skill have been combined by illustrators and authors to make this book the most useful of any for the region. Its value, indeed, will extend beyond the artificial boundaries of the state.

Naturalists who are acquainted with Northwest birds will notice immediately the many changes in common names. At first glance this would seem to be unnecessary, but since the names follow those suggested by the Committee on Classification and Nomenclature of the American Ornithologists' Union for use in the forthcoming revision of the *Checklist of North American Birds*, the changes were wisely included. About 60 pages are given over to the following: location, topography, climate, life zones, history of ornithology in Washington down through the modern period, conservation, wildlife refuges, and a hypothetical list for the state. A list of geographic localities "to save repetition and explanation in the text" is included.

The general plan of the book follows that of *The Birds of Oregon* by Gabrielson and Jewett. The status of each bird in an annotated list is given along with a brief description and distribution (with authorities and dates) in the state. This is followed by a generalized discussion of each species or race and includes such information as food habits, call notes, early collecting records and nesting habits. It is in this section that the amateur enthusiast will find his greatest interest centering for it is here that he will find the stories and incidents concerning the individual characteristics of the various birds. The style is good. But it is also here that the working ornithologist will be puzzled at the incompleteness of the specimen records of some species. Perhaps these records are only selected in order to typify the race under discussion. If this be so then perhaps some statement to that effect should have been included. The same might be said of the bibliography. It is far from complete for the state, and while it contains well over 1300 titles it might well have been titled "Selected Bibliography" if this is the intent.

As mentioned above, boundaries of states and other distributional areas are largely artificial. In the present work brief mention of the distribution of our races outside our limits would have been very helpful in understanding the overall resident or non-resident status of each. Conversely, it is difficult to understand why descriptions of egg and downy young are included for those races not nesting within our limits.—Gordon D. Alcorn, College of Puget Sound, February 15, 1954.

SOCIETY MEETINGS

The Pacific Northwest Bird and Mammal Society held a regular meeting at 8 p. m. October 17, 1953 in the Science Hall of Pacific Lutheran College, Parkland, Washington. The minutes of the previous meeting were read and accepted.

It was announced that the Society has been invited to participate in the meeting of the Pacific Division of the A.A.A.S. in Pullman, June 21-26, 1954 and in the 1954 national Christmas meeting of the A.A.A.S. in Berkeley, California.

Mr. William Rourke of Seattle was elected Treasurer to fill the unexpired term of Dr. Yocom who resigned the office on moving to California.

The following were elected to membership:

Paul A. Johnsgard of Pullman, Washington.

Mrs. John W. Duffield of Seattle.

John W. Slipp of Tacoma was reinstated to membership.

The following change in the By Laws of

the Constitution of the Society was proposed and approved at first reading:

By Laws Article 1 Div. A. Types of Membership. Sec. 6. Honorary Membership in this Society may be conferred upon any person who, in the opinion of the Society, has rendered outstanding service in the field of northwestern ornithology or mammalogy. All propositions for conferring such membership must be in writing and signed by at least three active members of the Society, filed with the Secretary, and approved by the Executive Board. The Secretary will then notify the members of such proposal at least one month before the annual meeting of the Society, at which meeting such proposition shall be presented and acted upon. A unanimous vote of members present shall be necessary for election to Honorary Membership. Honorary members shall be exempt from all dues and shall be entitled to all rights and privileges of active members.

Mr. E. C. Bender, now Assistant Naturalist at Mt. Rainier but recently at Hawaii National Park, described the harmful effects

on the native fauna and flora of introduction of exotic birds and mammals to the Hawaiian Islands.

Mr. John W. Slipp described the use of sea birds as indicators of fish schools and detailed a method of determining direction and speed of movement by a cruising tally from various quadrants.

Mrs. E. C. Ebert of Olympia showed photographs of nesting sea birds of the Hawaiian Islands. Following the program, the meeting adjourned to the Biology Laboratories for informal discussion over doughnuts and coffee.—BURTON T. OSTENSON, *Secretary*.

The Pacific Northwest Bird and Mammal Society held a regular meeting at 2 p. m., November 21, 1953 at the University of British Columbia, Vancouver, B. C.

The minutes of the previous meeting were read and accepted.

The proposed change of the By Laws, Article I, Div. A, Sec. 6 providing for method of proposal of Honorary Members as detailed in minutes of the October 17, 1953 meeting was accepted.

Mr. Chester Kibbe of the Oregon State Game Commission was voted to membership.

Condolences of the Society were expressed to Mr. T. L. Thatcher of Little Mountain, Hope, B. C., on the death of his wife, Mrs. Beatrice M. M. Thatcher.

The following program was presented:

Mr. Robert Webb on *Techniques of a Wilson Snipe Study*, described the use of Japanese mist nets for the capture of birds for study.

Dr. M. E. Udvardy on the *Swift and the Weather*, described the incidence of the Black Swift seen in numbers at Vancouver on rainy days of summer. Both the Black and the European Swifts apparently move great distances from young in nests in order to feed in favorable quadrants of cyclonic storms.

Mr. Andrew Radvanyi on *Porcupine of Eastern Canada*, described a survey of porcupine damage on Acadia Forest Experiment State of New Brunswick. Porcupines did extensive damage to spruce trees especially by stripping bark and clipping off twigs. Bounty payments and poisoning were used as means of control.

President Garrett Eddy commented on forestry problems in Washington caused by damage to trees by bears, rabbits, deer and mountain beaver.

Mr. Bud Faye on the *Cottontail Rabbit in New England* reported on work done at

Massachusetts Cooperative Wildlife Unit on inter-relationships between the native *transitionalis* and the introduced *floridanus*.

Mr. John Bandy on *Beaver in the High Country* told of the value of the beaver in water conservation and forest ecology and the problems of beaver survival in the submarginal habitat of the higher altitudes.

Miss Mary F. Jackson on the *Population Dynamics of the Barrows Golden-eye* detailed the breeding potential and mortality factors of this duck in British Columbia.

Dr. Ian McT. Cowan on *Ornithology in Britain* described a number of bird study stations and commented on the considerable interest shown by amateur ornithologists.

Dr. G. Clifford Carl showed a striking color film, *Pelican Parade*, taken in the Cariboo country.—BURTON T. OSTENSON, *Secretary*.

A regular meeting of the Pacific Northwest Bird and Mammal Society was held December 12, 1953 at Portland State College. Fifty-one people were in attendance.

The following program was presented:

Mr. Stanley G. Jewett showed the film by Ed N. Harrison, *Some Birds of the Klamath Region*.

Mr. Alex Walker presented the paper, *Some Notes on the Tree Mouse*, with slides.

Mr. W. E. Griffie showed slides on birds' nests in the Hooper Bay, Alaska, area.

Mr. Jewett showed the Fish and Wildlife Service film, *Haunts for the Hunted*.

Mr. Leo Simon showed color slides on birds and mammals — mountain sheep, bear, nutcrackers and camp robbers.

Mr. Ray Albright showed selected bird and mammal color slides.

Mr. Charles G. Hanson showed color slides on *Birds and Mammals of the Steens Mountains Area*.

Dr. Kenneth Gordon showed color slides of the *Dusky-tailed Woodrat* and *Animal Tracks in Dune Sand*.

Dr. K. E. Payne played the new recording, *Bird Songs*.

February 13, 1954 was selected as the date for the Oregon Regional Meeting at Linfield College.

The dinner meeting at 6:00 p. m. at the Y.M.C.A. was attended by 30 members and guests of the Pacific Northwest Bird and Mammal Society and the Oregon Nature Conservancy and honored Mr. Stanley G. Jewett. Mr. Leo F. Simon acted as master of ceremonies and outlined Mr. Jewett's life, activities and achievements. Other members also paid brief tributes to Mr. Jewett's friendship and service.—JANE C. DIRKS-EDMUNDS, *Regional Vice President for Oregon*.

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